

REMARKS

The application has been carefully reviewed in view of the Official Action. In response, all of the independent claims have been amended to more particularly define the invention.

The summary and page 2, paragraph 1 of the Official Action say that the applicant has not filed a certified copy of the GB 9222205.8 application as required by 35 U.S.C. 119(b). However, applicant has filed a certified copy of the GB 9222205.8 application in the parent application Serial No. 08/347,427 filed Nov. 24, 1994, and receipt of that certified copy was acknowledged in the Official Action dated March 6, 1996, Paper No. 5 in the parent application. Pursuant to M.P.E.P. § 201.14(b), applicant need not submit another certified copy when a certified copy of the priority document has been received in the parent application. Applicant therefore respectfully requests the Examiner to acknowledge that the certified copy has been received in Application Serial No. 08/347,427.

On page 2, paragraph 4 of the Official Action, claims 9-12 and 14-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Whyte U.S. Pat. 3,942,170. In response, all of the independent claims have been amended to more particularly define the applicant's invention.

Whyte '170 discloses a distribution network powerline carrier communication system having inductive couplers and

frequency translating repeaters cooperating to circumvent obstructions, such as distribution transformers, and to increase the signal strength. The inductive couplers pick up the communication signals without metallic contact to the primary distribution lines. (See abstract.)

The Official Action says that the claimed main inductor is met by either winding (Nos. 20 and 22) of the power transformer arranged between a power input and a power output to the consumer's premises. The applicant's communications apparatus, however, was not intended to couple power and telecommunications directly from a high voltage distribution line to a consumer's premises. Nor was the applicant's claimed main inductor intended to be a primary winding or a secondary winding of a step-down distribution transformer. In the case of a residential consumer, for example, the high-voltage distribution line and step-down distribution transformer may be located away from the consumer's premises. The applicant's communications apparatus was intended to couple the electricity distribution and/or power transmission network, which includes consumer's step-down distribution transformer, to the consumer's premises.

The applicant's independent claims 9, 14 and 18 have been amended to more particularly point out that the main (or first) inductor is arranged between a mains electricity input from the network and a mains electricity output to said consumer's

premises to allow the low frequency high amplitude mains electricity power signal to pass through the first inductor in a low impedance path from the mains electricity input from said network to said mains electricity output to said consumer's premises for frequencies from zero frequency to a low frequency of said low frequency high amplitude mains electricity power signal. Support for this language is found in applicant's original specification, for example, on page 6, lines 12-17; page 10, lines 10-17; and in FIG. 6. The claim in particular defines the "low pass filter" function of the main inductor. Unlike a transformer, which does not pass frequencies down to zero frequency (i.e., d.c.), the main inductor is connected between the mains power line and the consumer's premises so as to provide a path, from the mains power line through the inductor and to the consumer's premises, having a low impedance from zero frequency to the power line frequency. This can be done as shown in FIG. 6 by connecting one end of the conductor of the main inductor to the mains electricity input from the network and the other end of the conductor of the main inductor to the mains electricity output to the consumer's premises. Alternatively, the main inductor could be wired in series with another component, such as another inductor, in a conductive path from the mains electricity input to the mains electricity output, as described on page 13 lines 9-12 of applicant's specification. An inductor functioning

as a low-pass filter and conducting up to 100 amperes at 50 or 60 Hz to a consumer's premises is considerably less expensive than a transformer capable of supplying 100 amperes at 50 or 60 Hz to a consumer's premises.

On page 3, the Official Action says that the claimed coupling capacitor is met by one of the amplifying capacitors (No. 114) connected between the power input and the transmitter/receiving system (Nos. 111 and 113). However, the capacitor 114 in Whyte '170 is a tuning capacitor that shunts a winding on a ferrite rod antenna. See Whyte '170, column 7, lines 14 to 19.

To more clearly distinguish Whyte '170, the applicant's independent claims have been amended to more particularly define the function of the coupling capacitor: "to allow the telecommunication signal to pass through the coupling capacitor in a path between said mains electricity input and the signal input/output line and to attenuate low frequency components of said low frequency high amplitude mains electricity power signal." Support for this language is found in the applicant's original specification on page 6, lines 26 to 30; page 10 lines 30-33; and in FIG. 6.

With reference to applicant's claim 14, the Official Action on page 4 says that the claimed series combination of a coupling capacitor and a fuse is met by the capacitor and fuse connected

between the distribution transformer (No. 26) and the unidirectional coupler (No. 70) from the transmitter/receiver combination in Whyte. However, this particular capacitor and fuse combination in Whyte appears to be connected between a signal output line from the transmitter (No. 113) and what would be the mains electricity output of the communications apparatus, instead of the mains electricity input as recited in applicant's claim 14.

With respect to claims 11 and 15, these claims have been amended to point out that the shunt capacitor is for shunting to ground any of the telecommunication signal having passed to the mains electricity output. Support for these amendments is found in applicant's original specification, for example, in the last paragraph on page 6; page 11 lines 1 to 4; and in FIG. 6. The capacitors of Whyte referred to in the Official Action as "shunt capacitors" are coupling capacitors for coupling the telecommunications signals onto the power lines, and they are not shunt capacitors for shunting any of the telecommunication signals to ground.

On page 4, paragraph 6 of the Official Action, claims 13 and 17-19 were rejected under 35 U.S.C. § 103(a). The applicant respectfully traverses. It is true that some kinds of inductors, such as ferrite rod antennas, are constructed by wrapping conductive material around elongated ferrite rods. However, it

is not conventional to make power transformers or inductors operable at 50 or 60 hertz power line frequencies by wrapping conductive material around elongated ferrite rods. Power transformers or inductors operable at 50 or 60 hertz are conventionally made by wrapping wire around laminated cores. For power line electromagnetic interference (EMI) filters, it is also conventional to use torroidal cores or closed cores of powered iron or ferrite material.

The Official Action is devoid of any evidence that it would have been obvious to make a high-current, power-line inductor by wrapping conductive material around an elongated ferrite rod. Moreover, the Official Action is devoid of any reason why it would have been obvious to construct the main inductor out of two generally parallel-spaced elongated ferrite rods wrapped with conductor, or to provide a shunt capacitor connecting the intermediate point to ground. See, for example, In re Gordon et al., 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) (mere fact that prior art could be modified by turning apparatus upside down does not make modification obvious unless prior art suggests desirability of modification); Ex Parte Kaiser, 194 U.S.P.Q. 47, 48 (PTO Bd. of Appeals 1975) (Examiner's failure to indicate anywhere in the record his reason for finding alteration of reference to be obvious militates against rejection).

Claim 18 has been amended in a fashion similar to claims 9

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and 14. The applicant respectfully disagrees with the reading of the claimed coupling capacitor and fuse arrangement in the unidirectional coupler (No. 70) of Whyte for the same reasons as discussed above with respect to claim 14. Moreover, claim 18 has been amended to define that the shut capacitors are for shunting the telecommunication signal to ground.

New dependent claims 20-28 further define applicant's main inductor. Support for claims 20, 23, and 26 is found in applicant's original specification for example on page 3, lines 13-19 and page 4, lines 1-6. Support for claims 21, 24 and 27 is found in applicant's original specification for example on page 6, lines 21-25, and page 7, lines 14-16. Support for claims 22, 25 and 28 is found in applicant's original specification for example on page 5, lines 16-20.

In view of the above, it is respectfully submitted that the application is in condition for allowance. Early allowance is earnestly solicited.

Signed at Houston, Harris County, Texas this 4th day of February, 1998.

Respectfully submitted,



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CERTIFICATE OF MAILING

I hereby certify that this AMENDMENT IN RESPONSE TO OFFICIAL ACTION, a FORM 1449 and a copy of each cited reference (Bartholomew et al. U.S. Pat. 5,319,634; Mansfield, Jr., U.S. Pat. 5,066,939; and Berger U.S. Pat. 2,577,731) and a check for \$640.00 are being deposited with the United States Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231 on this 4th day of February, 1998.

Richard C. Auchterlonie
Name of Applicant, assignee,
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February 4, 1998
Date of Signature